REMARKS

It is believed that the above amendments and following remarks attend to each and every rejection and objection presented in the pending April 25, 2005 office action. Claims 1-20 remain pending, with claims 1, 6, 11 and 15 being independent.

Specification

Paragraph [0001] is amended to insert information of related applications without new matter.

Claim Rejections – 35 U.S.C. §102

Claims 1-20 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,668,732 to Khouja et al. (hereinafter "Khouja"). Respectfully, we disagree.

To anticipate a claim, Khouja must teach every element of the claim and "the identical invention must be shown in as complete detail as contained in the ... claim." *MPEP 2131* citing *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987) and *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989). Khouja does not teach every element of claims 1-20.

Claim 1 recites a method for determining activity factors of a circuit design, including steps of:

  a) assigning an activity factor to one or more node types;

  b) reading one or more signal nets from a netlist of the circuit design;

  c) processing the signal nets to associate one of the node types with each of the signal nets; and

  d) determining an activity factor for each of the signal nets based upon node type.

Step a) of claim 1 requires that an activity factor be assigned to one or more node types. Paragraph [0019] of the specification recites "a node type may be static, dynamic, clock or non-toggling." Paragraph [0020] and table 1 of the specification illustrate that an activity factor is assigned to one or more node types. For example, table 1 shows that an activity factor of 0.2 is assigned to node type dynamic.

On the other hand, Khouja discloses that its process "must also determine the mode of every endpoint net for each level," wherein "these endpoint nets represent inputs of sequential cells or primary output ports." Khouja col. 36, lines 4-7. Khouja continues: "the mode of each such output net defaults to 'sp-only'... if the net is used to drive any asynchronous logic... the net's mode is set to 'sp-and-tr'." Khouja col. 36, lines 7-11.

The *modes* of Khouja are thus entirely different from *node* types of the immediate application.

Steps b) and c) of claim 1 require that the signal nets are read from a netlist of the circuit design and processed to associate a node type with each signal net. For example, paragraph [0019] of the specification teaches "circuit recognition tool 120 processes the signal nets to determine a node type that most closely resembles the signal net," such that each signal net is processed and categorized as one of the node types. Since an activity factor is assigned to each node type in step a) of claim 1, an activity factor is thus determined for each signal net.

On the other hand, Kjouja determines modes for endpoint nets and not each signal net. Khouja in particular discloses "computing toggle rates for a combinational logic circuit ... toggle rates are first annotated on the primary inputs ... logic function is computed at each net in the circuit ... for each function, Boolean difference functions and their probabilities are computed with respect to each input." See Khouja col. 25 lines 41-64. Khouja thus computes activity factors for signal nets in the circuit and does not assign an activity factor to the signal nets based upon the associated node type as required by step d).

At least for these reasons, Khouja cannot anticipate claim 1 under 35 U.S.C. §102(b).

Claim 6 recites a system for determining activity factors of a circuit design, including elements:

    a)   a circuit recognition tool responsive to control by an E-CAD tool to determine node types of one or more signal nets of the circuit design;

    b)   memory for storing activity factors associated with the node types, the activity factor being determined by node type; and

c) an analysis tool being operable to access the memory to determine an activity factor for each of the signal nets based upon node type.

Khouja does not disclose use of a circuit recognition tool for determining node types of one or more signal nets as required by element a) of claim 6. Further, Khouja does not store activity factors associated with node types in memory, as required by element b). Paragraph [0021] and table 1 of the specification describe an exemplary lookup table and FIG. 1 of the drawings shows one exemplary activity factor lookup table 124. These examples illustrate the relationship between node types and activity factors. Khouja does not disclose or suggest node types associated with activity factors stored within a memory.

Claim 11 recites a system for determining activity factors of a circuit design, including elements of:

a) means for reading one or more signal nets from a netlist of the circuit design;

b) means for processing the signal nets to determine a node type for each of the signal nets; and

c) means for determining an activity factor for each of the signal nets based upon node type.

As argued above, Khouja does not process signal nets to determine a node type for each of the signal nets as required by step b). Further, Khouja does not disclose or suggest determining activity factors for signal nets based upon node type as required by element c). Therefore, Khouja cannot anticipate claim 11.

Claim 15 recites a software product comprising instructions, stored on computer-readable media, wherein the instructions, when executed by a computer, perform steps for determining activity factors of a circuit design, including:

a) reading one or more signal nets from a netlist of the circuit design;

b) processing the signal nets to associate a node type with each of the signal nets; and

c) determining an activity factor for each of the signal nets based upon the node type.

Again, as argued above, Khouja does not process signal nets to associate a node type with each of the signal nets as required by step b) of claim 15, and Khouja does not determine and activity factor for each of the signal nets based upon node type.

Reconsideration of independent claims 1, 6, 11 and 15 is respectfully requested.

Each claim of claims 2-5, 7-10, 12-15 and 16-20 depends from one of these independent claims and benefits from like argument. But these claims also have features that patentably distinguish over Khouja. For example, claim 2 recites determining a node type selected from the group of static, dynamic, clock and non-toggling. Khouja does not disclose any of these node types.

Claim 3 recites storing the activity factor within a lookup table. Khouja does not – anywhere – disclose or suggest storing activity factors within a lookup table.

Claim 4 recites determining switching power requirements based upon the activity factor for each of the signal nets; and claim 5 recites using the activity factor assigned to the node type of each of the signal nets. Khouja does not associate activity factors with node types of each signal net.

Claim 7 recites that the analysis tool is responsive to control by the E-CAD tool to analyze the circuit design using the activity factors. Claim 8 recites the memory storing an activity factor lookup table, the analysis tool accessing the activity factor lookup table to determine the activity factor for each of the signal nets based upon node type. Khouja again does not disclose or suggest use of a memory for storing an activity factor lookup table, nor an analysis tool that accesses the activity factor lookup table to determine the activity factor for each of the signal nets based upon node type.

Claim 9 recites means for accepting user inputs to specify the activity factors stored in the memory. Claim 10 recites node types that are of static, dynamic, clock and non-toggling. Claim 12 recites means for determining a node type selected from the group of static, dynamic, clock and non-toggling. Claim 13 recites means for assigning an activity factor to each of the node types. Claim 14 recites means for assigning being responsive to user inputs to store activity factors associated with the node types. Claim 16 recites determining a node type selected from the group of
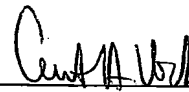
static, dynamic, clock and non-toggling. Claim 17 recites assigning an activity factor to each of the node types. Claim 18 recites storing the activity factor within a lookup table. Claim 19 recites determining switching power requirements based upon the activity factors for the signal nets. Claim 20 recites reading the activity factor for each of the signal nets. Khouja does not disclose the features of these claims.

In view of the above arguments, we contend that claims 1-20 are allowable and request reconsideration.

It is believed that no fees are due in connection with this amendment. If any additional fee is due, please charge Deposit Account No. 08-2025.

Respectfully submitted,

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